Ø BEAT

DECEMBER 1984

COLORADO SPRINGS,
COLORADO

PIKES PEAK RADIO AMATEUR ASSOC

SPECIAL SERVICE CLUB

12 pages

Frank Drake KL7IPV
4964 Harvest Lane
Colorado Springs, CO 80917

FIRST CLASS MAIL

Ø BEAT

COMPUTER CORNER

FROM THE DESK OF YE OLDE EDITOR

Well, another month has passed and if you're like me; you've all suffered through the football games and turkeys. I don't watch football but the radio was miserable because a lot of hams were watching some of the games. If there wasn't a game there was a contest on. So, I sat down to the keyboard and entered the rest of the "CIRCLES" program. Therein lies the tale for this month. Throw away the program listing for Nov. I found that the program as sent to me is full of bugs. I've debugged most of it and it should play okay for most of you. In the DATA section you may enter any call area and coordinates that you know. The program will then call that up for you. I ran the program through all the choices and it seemed to be all right. If you guys (or gals) have any program suggestions, let me know. If you have an idea for a program, tell me what you want the program to do and I'll try to come up with something to fill the bill. It may not be as sophisticated as those in the computer stores, but I can make up something. That may be an idea! I'll try to come up with a skeleton program, you guys can add to it to fill in the holes where you think you want to have the program do something additionally. Programming by Committee!! Boy, that could be V-E-E-E-R-Y interesting...This month you will find articles from the " Gateway " newsletter. This letter is the ARRL newsletter dedicated to Packet Radio. Hopefully there will something to interest a lot more of you in this months Zero Beat. This is YOUR newsletter. If you like, or don't like, the changes I've been making; say so. After all, this is supposed to be to keep you informed and interested. I haven't heard any feedback for months, I assume that with no noise there are no complaints and work that way until someone rings the gong!! So far I have received only one return from the survey I placed in the last Zero Beat! I know that more of you have computers than that. Come on now, are you guys trying to keep them a secret?? Bring them to the Dec. meeting so I can let everyone know who's got what. By the way, due to an apparent lack of any interest, the Dec. party for the 15th is cancelled. Sorry, but if you don't want you don't get. Elsewhere in this issue is the list of local Computer Bulletin Boards, as requested by the ONE questionaire turned in.
That's is for this month. I wish all of you, for me and for the board members, a very Merry Christmas and a Happy & Prosperous New Year. See you in 1985.

73, Frank

```
MICRO QUESTIONAIRE
CALL..........NAME........................
I own ( ) have access to ( ) the follow-
ing computer system: MAKE...............
  DEL........... DRIVES..... 51/4( ) 8( )
PROCESSOR 6502( )8080( )Z80( )6809( )
OTHER ( ). MEMORY ...K RAM ...K ROM
DISK IS SINGLE( ) DBL( ) DENSITY.
PRINTER MAKE............ MODEL..........
PAPER WIDTH.....CHARACTERS/LINE.........
SPROCKET( )ROLLER( ) FEED, DOT MATRIX( )
LETTER QAUL.( )MODEM MAKE....MODEL......
OPERATING  SYSTEMS MDOS( )C/PM( ) OR
OTHER............................
LANGUAGES:BASIC( )ASSEMBLER( )OTHER.....
PROGRAM APPLICATIONS:RTTY( )GAMES( )
ASCII COMM( )PACKET( )ATV( )OTHER.......
COMMENT/SPECIAL INTERESTS...............
```

THEY'LL DO IT EVERY TIME -:- -:- -:- by Hatlo

```
50 PRINT " GREAT CIRCLE DISTANCE AND BEARING CHART"
52 REM PROGRAMMED BY GARY EVANS, AA6R & RELAYED BY SCOTT THOMPSON, KB6CC
55 PRINT
60 PRINT" DO YOU NEED INSTRUCTION? - YES OR NO "
65 INPUT I$
70 IF I$="NO" THEN 165
100 PRINT"THIS PROGRAM CALCULATES GREAT CIRCLE DISTANCES IN"
110 PRINT"STATUTE MILES & KILOMETERS AND BEARINGS BETWEEN"
120 PRINT"YOU AND THE REST OF THE WORLD. LATITUDES IN THE"
130 PRINT"NORTHERN HEMISPHERE ARE POSITIVE AND SOUTHERN "
135 PRINT"HEMISPHERE ARE NEGATIVE. LONGITUDES IN THE EASTERN "
140 PRINT"HEMISPHERE ARE POSITIVE AND THE WESTERN HEMISPHERE"
150 PRINT"ARE NEGATIVE. ALWAYS USE DEGREES WITH DECIMAL "
155 PRINT"PARTS - NO MINUTES AND SECONDS.?"
160 PRINT
170 PRINT"WHAT IS YOUR NAME AND CALLSIGN?"
175 LINE INPUT N$
180 PRINT"WHAT IS YOUR LOCATION?"
185 LINE INPUT W$
190 PRINT"WHAT IS THE LATITUDE OF YOUR LOCATION?"
195 INPUT A
200 REM CONVERT A TO RADIANS
205 LET A1=A*3.14159/180
210 PRINT
220 PRINT " WHAT IS THE LONGITUDE OF YOUR LOCATION? "
240 INPUT L1
250 LET J=0
252 LET P=0
255 GOSUB 2000
260 PRINT"SELECT THE FUNCTION YOU WANT AND ENTER THE NUMBER."
265 PRINT
270 PRINT"1-GLOBAL GRID CENTERED ON YOUR LOCATION"
275 PRINT"  (LAT EVERY 15 DEGREES & LONG EVERY 30 DEGREES)"
280 PRINT"2-BEARINGS AND DISTANCES TO MAJOR U.S. CITIES."
285 PRINT"3-BEARINGS AND DISTANCE TO DX LOCATIONS FROM THE"
290 PRINT"ARRL COUNTRIES LIST - LISTED BY CALL PREFIX."
292 PRINT"4-BOTH U.S. CITIES AND DX LIST"
295 PRINT"5-BEARINGS AND DISTANCE TO USER SELECTED POINTS"
300 PRINT"6-ENTER NEW CENTRAL LOCATION"
305 PRINT"7-TERMINATE THIS PROGRAM"
307 PRINT
310 INPUT S
315 ON S GOTO 400,515,605,510,700,50,9999
400 GOSUB 2000
401 PRINT"GREAT CIRCLE COORDINATES CENTERED ON ";W$
405 PRINT
410 PRINT"PROGRAMMED FOR ";N$
430 PRINT
435 PRINT"LATITUDE  LONGITUDE  MILES  KILOMETERS  BEARING "
437 PRINT"--------------------------------------------------- "
440 FOR L2=-180 TO 180 STEP 30
450 FOR B = -90 TO 90 STEP 15
460 GOSUB 1000
465 PRINT TAB (3);B;TAB(11);L2;TAB(22);D1;TAB(30);D2;TAB(44);R2
469 LET K=K+1
470 IF K=55 THEN 485
475 NEXT B
480 NEXT L2
482 GOTO 250
485 GOSUB 2000
490 PRINT"LATITUDE  LONGITUDE  MILES  KILOMETERS  BEARING"
```

```
491 PRINT"----------------------------------------"
495 GOTO 475
510 LET F=1
515 GOSUB 2000
520 PRINT" CITIES LIST CENTERED ON ";W$;" FOR ";N4
525 PRINT
530 PRINT" BEARINGS AND DISTANCES TO MAJOR U.S. CITIES "
535 PRINT
540 PRINT TAB(5);"CITY";TAB(15);"LAT/LON         MILES   K/M   BEARING"
545 PRINT"----------------------------------------"
550 LET K=K+1
560 GOSUB 2990
565 IF M$="ENDATA1" THEN 597
570 GOSUB 1000
575 PRINT M$;TAB(13);B;"/";L2;TAB(28);D1;TAB(35);D2;TAB(43);R2
580 IF K=55 THEN 590
585 GOTO 550
590 GOSUB 2000
595 GOTO 540
597 IF F=1 THEN 614
598 RESTORE
599 GOTO 250
605 READ M$,B,L2
608 IF M$= "ENDATA1" THEN 614
610 GOTO 605
614 GOSUB 2000
615 PRINT "BEARINGS TO DX LOCATIONS ON ARRL COUNTRIES LIST"
620 PRINT "DEL--MEANS A COUNTRY DELETED FROM THE ARRL COUNTRY LIST"
625 PRINT
630 PRINT "DX LISTING CENTERED FROM";W$;" FOR ";N$
635 PRINT
640 PRINT TAB(5);"DX PREFIX    LAT/LONG    MILES    K/M    BEARING"
645 PRINT "----------------------------------------"
650 LET K=K+1
655 LET J=J+1
660 READ M$,B,L2
665 IF M$="ENDATA2" THEN 696
670 GOSUB 1000
675 PRINT J;TAB(5);M$;TAB(15);B;"/";L2;TAB(29);D1;TAB(36);D2;TAB(45);R2
680 IF K=55 THEN 690
685 GOTO 650
690 GOSUB 2000
696 RESTORE
699 GOTO 250
700 REM
705 PRINT " ENTER DISTANT LOCATION DESTINATION "
715 LINE INPUT M1$
720 PRINT
725 PRINT " ENTER LATITUDE OF DISTANT POINT "
735 INPUT B
740 PRINT
745 PRINT " ENTER LONGITUDE OF DISTANT POINT "
755 INPUT L2
760 GOSUB 1000
765 PRINT
770 PRINT " DISTANCE FROM ";W$;" TO ";M1$;" IS ";D1;" MILES"
771 PRINT " THAT DISTANCE IS ";D2;" KILOMETERS"
772 PRINT " BEARING TO ";M1$;" IS ";R2;" DEGREES"
775 PRINT
780 PRINT " DO YOU WANT OTHER POINTS CALCULATED? YES OR NO"
790 N$=INPUT$(1)
795 IF N$="N" THEN 9950
797 IF N$="NO"THEN 9950
```

RAMBLINGS

Having just received a news flash from Ken, WA6TTY, (12-30-84) I have some minor corrections to the FOX Hunt blurb. Those hardy souls were in actuality: As the FOX: Bob,WB6GTM; and the chasers were: Doug, WB0MHP; Ken, WA6TTY; Frank, KL7IPV; Bob, N1CKE; Les, KC0NC; and John, call ?. Ken has announced that the next hunt will be on Dec. 16 (first Sunday after the General meeting) and will start from the Chapel Hills Mall at 1:00PM. See you there! Thanks, Ken.

****

As requested from an interested computer buff, here are the local CBBS's.

Phone #	Name	Computer types
632-0669	Computer Farm	Atari, Commodore, others
632-3391	Electronic Cottage	Most types, used for forums and discussions
578-9406	Smart Net	Most types, dedicated to game and role playing
475-0648	ComDyn	Primarily Kaypro, downloads CP/M & others
591-8673	Citadel Comp.	Mostly Kaypro, membership required
392-7510	Academy Comp.	Commodore, Atari, TI, others, open for all
576-2499	Petula	Most types, exchange of ideas & discussions
598-4662	RIBBS	Most types, downloads in CP/M and other
578-5405	Modem Times	Most types, magazine format, subscription req.

That is the boards as I have them. I cannot take responsibility for inaccuracies as they change continually. I do suggest that they be used in gentlemanly fashion much like you would expect someone to use the ham bands. Most boards are on due to the interest of the owner and as a service to us, the users. It doesn't take much to burn a SYSOP out when he gets no appreciation and others try to crash the system just to see if they can. It is not an inexpensive operation and the SYSOP's deserve our help and support. Use them right or we all lose 'em!

****

From " Gateway - The ARRL Packet-Radio Newsletter " Sept. 25th, 1984
" Packet Radio on Japanese Satellite"

Sometime between 1985 and 1987, the Japan Amateur Radio League(JARL) and JAMSAT will be launching the first all-Japanese amateur radio satellite, JAS-1. Along with the Mode-J transponder, JAS-1 will carry a store-and-forward packet-radio transponder. The packet-radio transponder will operate at 1200 bauds, FSK, with an uplink in the 2 meter band, and a downlink in the 70-cm band. The designers of the satellite have agreed to use the AX.25 link-layer protocol, strengthening the protocol's standing as an international standard.

****

From " Gateway - The AARL Packet-Radio Newsletter" August 28,1984
RMPRA PACKET BULLETIN BOARD
The Rocky Mountain Packet Radio Association (RMPRA) is now operating what they believe to be the most sophisticated packet bulletin board around.
The system is a modified version of The Bread Board System (TBBS), by Phil Becker, WB0EIV. It was donated to RMPRA and modified for packet-radio operation by Phil and Dave Ebert, W7RH.
TBBS is a modular software system that can be easily modified by the system operator (SYSOP) to fit his particular needs. The RMPRA version is accessible the Pike's Peak digipeater or via the telephone at (303) 452-4735. If you want to call up and see the software in operation, set your terminal to 300 bauds, half-duplex, 8 data bits and no parity.

A Very Merry Christmas
and a Happy New Year!

The regular meeting of the Pikes Peak Radio Amateur Association was held at Guiseppe's Depot November 14 at 7:30 p.m. 50 members and guests were present.

After introductions, Lee-KC0NC, reported that the treasury had income of $72.00 and expenses of $310.23. That left a balance of $1380.97.

A Christmas party had been arranged at Guiseppe's in the Baggage Room. (Because of lack of interest expressed, the party has since been cancelled.)

In other announcements: Dot indicated that volunteers for the Pikes Peak Hill Climb need to come forward now. All volunteers will attend a two-hour session on safety given by the sponsors. The Swapfest will be held Palm Sunday in 1985. A place is still being sought which would be bigger than the Polls Club. Mark-WB9NFE, announced he had been placed as an activity coordinator.

Thanks go to Jim, Steve, Harley, Ralph, and all who helped make the Novice classes successful this fall. Seven people in the area received their novice licenses. Upgrade classes will be held this winter. Please contact Frank if you are interested.

The Falcon Wanderers indicated they would like communications help during their four Folksmarches in 1985. Interested people should probably contact Mark-WB9NFE.

A motion was made and seconded to sell the excess equipment at auction. The motion passed unanimously.

Torn, the gentleman involved with the senior citizens and the club station, indicated a need for the number of hams who are 55 or older.

A fox hunt was scheduled for the following Sunday at 1:00 pm. In the west lot of Chapel Hills Mall. It was asked if there was interest in having one once a month.

The break occurred at this time and after the raffle, the program was held (Old Timer's Night).

Respectfully submitted,
Mark, N0EFF

In the absence of the Secretary, Mark, I was asked to record the " Old Timers" proceedings. Those who spoke were: Oak, K0ROL; Frank, W0HWH; and Frank, KL7IPV. Oak reminised about the days of 5 meters and the contest of 1938. Oak and a very good friend, now a recent Silent Key, were operating in their first contest and came out winners. Oak has the special QSL penny postcard, note the amount, set into plastic to commemorate the occasion. Oak also has a loving cup denoting them as the winners in the contest. Frank, W0HWH, told of his days when he worked for NBC broadcasting and worked behind the scenes on the Johhny Carson Show. Frank related an incident on the show which included Ed Ames, who was acting as an indian on another show. Ed was to demonstrate his prowess with the tomahawk by throwing it at a lifesize poster on the stage during the show. The first throw made by Ed was errant and wound up in an area which is known to induce an inordinate amount of pain in the male species of the human race. Frank, KL7IPV, related how he fooled with antennas and didn't particularly pay any attention to what the books said was proper. In one instance, having gotten an antenna to work that didn't "measure up"; Frank went mobiling. Along the way Frank met another ham who he had talked to while mobile. When asked about the strange antenna, Frank tried to explain, but was dismissed with the comment to the affect that the antenna wasn't the right length and wouldn't work. Oak, and Frank and I enjoyed regaling the others with our tales and look forward to hearing some from other members.

Respectfully submitted,
Frank, KL7IPV

7

The Board meeting of the Pikes Peak Radio Amateur Association was held November 19 at the home of Al-NØCMW. Present were: Al, Mark-NØEPF, Les-KCØNC, Bob-KØDJ, and Frank-KL7IPV.

Since December is homebrew night, the board set the awards for each place. First place will receive $40, second place $30, and third place $20. Anyone who has constructed a device is invited to enter.

It was indicated that Ed Means will present the January program on Amsat and Oscar.

A request was made that messages be sent to family and loved ones during Christmas from the Acacia Hotel. It was felt most if not all would be book traffic plus one line. Further information and questions will be handled at the December regular meeting.

As noted in the regular minutes, the Christmas party was cancelled due to lack of interest. The board will try again next year. Anyone interested in arranging this task and helping generate interest?

In further business, the board reviewed the equipment list and set minimum bids. This information should be published elsewhere in Ø-Beat.

There being no further business before the board, the meeting was cancelled at 8:20 pm. The next regular meeting will be December 12th at Giuseppe's Depot (Homebrew Night!)! the next board meeting will be December 17th.

Respectfully submitted,

Mark   NØEPF

FROM " GATEWAY - The Packet-Radio Newsletter " August 28th, 1984
PACKET RADIO AND ARES

Among packeteers, it is "common knowledge" that packet radio would be a good mode for the high-volume, error-free communications needed during emergencies. Unfortunately, this knowledge has yet to reach the leaders and operators in the Amateur Radio Emergency Services (ARES). To remedy this, a new chapter has been added to the ARRL's EMERGENCY COORDINATOR'S HANDBOOK.

In July, Mike Riley, WF4R, editor of E C Handbook, met with Terry Fox,WB4JFI of AMRAD. The two discussed ways in which packet radio could aid the ARES. The new ten-page " Packet-Radio " chapter in the E C Handbook is the result of that discussion.

The E C Handbook is sent free-of-charge to all Emergency Coordinators. The latest edition, with the packet-radio chapter, will be available early in Sept. At that time, packet-radio enthusiasts should be prepared to discuss emergency operations with their ECs.

(Ed note: although this is o "old news", I thought it might be of interest to all. It shows that ARES is trying to keep up with developements, and that new information is available to us through our ECs. Your continued support for ARES shows the ARRL that there interest "out here" and knowing that, the ARRL keeps the new stuff coming.)

```
799 IF N$="Y"THEN 60
1000 REM
1001 LET L=L2-L1
1003 LET X=0
1010 IF L -180 GOTO 1025
1015 IF L 180 GOTO 1035
 20 GOTO 1040
1025 LET L=L+360
1030 GOTO 1100
1035 LET L=L-360
1040 IF L 0 THEN 1100
1045 LET X=1
1100 REM
1110 LET B1=B*3.14159/180
1115 LET L=L*3.14159/180
1120 LET P=COS(L)*COS(A1)*COS(B1)+SIN(A1)*SIN(B1)
1125 LET P1=ATN(SQR(1-P*P)/P)
1130 LET P2=P1*180/3.14159
1135 IF P2 0 GOTO 1145
1140 GOTO 1150
1145 LET P2=P2+180
1150 LET D1=INT(P2*60*1.15152+.5)
1151 LET D2=INT(D1*1.6093+.5)
1155 LET R=COS(B1)*SIN(L)/SIN(P1)
1160 LET R1=ATN(R/SQR(1-R*R))
1165 LET R2=INT((R1*180/3.14159)+.5)
1170 IF ABS(R) .999998 THEN 1500
1175 IF ABS(R) .00174 THEN 1600
1180 LET B2=(B+.1)*3.14159/180
1185 LET R3=COS(L)*COS(A1)*COS(B2)+SIN(B2)*SIN(A1)
1190 LET R4=ATN(SQR(1-R3*R3)/R3)
1200 LET R6=COS(B2)*SIN(L)/SIN(R4)
 05 IF X=1 THEN 1240
 10 IF ABS(R6) ABS(R) THEN 1230
1215 LET R2=360-ABS(R2)
1220 GOTO 1700
1230 LET R2=180+ABS(R2)
1235 GOTO 1700
1240 IF ABS(R6) ABS(R) THEN 1255
1245 LET R2=180-ABS(R2)
1250 GOTO 1700
1255 LET R2=ABS(R2)
1260 GOTO 1700
1500 IF X=1 THEN 1530
1510 LET R2=270
1520 GOTO 1700
1530 LET R2=90
1540 GOTO 1700
1600 IF ABS(L) 178 THEN 1640
1605 IF B A THEN 1630
1610 LET R2=0
1620 GOTO 1700
1630 LET R2=180
1635 GOTO 1700
1640 IF B A THEN 1630
1645 GOTO 1610
1700 RETURN
2000 REM
2005 PRINT
 06 PRINT
2007 PRINT
2008 PRINT
2009 PRINT
```

```
2010 PRINT
2011 PRINT
2012 PRINT
2020 K=0
2030 RETURN
2990 READ M$,B,L2
3000 DATA ANCHORAGE,61,-150,ATLANTA,33.75,-84.4
3010 DATA ANNAPOLIS,39,-76.25,NANHEIM,33.51,-117.57,BALTIMORE,39.17,-76.37
3020 DATA BERKELEY,37.57,-122.18,BIRMINGHAM,42.33,-83.15,BOISE,43.43,-116.3
3030 DATA BOSTON,42.21,-71.04,CEDAR CITY,37.4,-113.1,CHICAGO,41.53,-87.38
3040 DATA CLEVELAND,41.3,-81.41,DEARBORN,42.18,-83.1,DETROIT,42.2,-83.03
3050 DATA DISNEYLAND,33.48,-117.55,EVANSTON,42.02,-87.42,GREAT FALLS,39,-77.17
3060 DATA FRESNO,36.39,-120.12,HUNTSVILLE,33.58,-151.06,INDIANAPOLIS,39.45,-86.08
3070 DATA JACKSONVILLE,30.2,-81.4
3080 DATA ENDATA1,0,0
4500 DATA 8Z,29,47,9A1,44,12
4510 DATA ENDATA1,0,0,ENDATA2,0,0
4530 RETURN
9950 PRINT "I hope  this helps you get the rare ones!"
9999 END
```

****

There must be a bit of "nutzy" in all of us. That was pretty well proven
for about eight of your local two meter guys on November 11th. The temp was 42
and one of these hardies was selected to be a FOX! Jim, WB6TTY (I hope I got
that right) went into hiding and bid the rest of us to "come find me!" The rest
of us, Bob, WB6GTM; Malcolm, KE9S; Les, KC0NC; John, call ?; Doug, WB0MHP; and
Frank, KL7IPV; went into the area with wild assortments of direction finding
stuff. The hunt lasted until 4:15PM and was ended with no one finding the FOX.
Those of us still left were told where to find the FOX and staged a round-up
at that location. Most had come within half a mile of the FOX but didn't get
close enough to find him. The prize of a 1984 hardbound ARRL Handbook was to go
to the one who found the FOX. It was decided that due to the perserverance of
the remaining hardy souls that the book would go to the one with the least mile-
age. That lucky person was Les with only 32 miles on the odometer. Les will be
the next FOX on a date announced at the next meeting. It was fun and all manner
of antennas were evident. Malcolm used his car as a beam by mounting three ant-
ennas on his car and turned the car to get the direction of the FOX (Can't you
just see Malcolm rotating his CAR ?) Doug had a small 3 element Yagi, Les had
a 2 element Quad, I had a really ! cheap 2 element wire Yagi. It was fun to see
what those different antennas would do. I had John riding with me and acting as
the antenna rotor. I didn't get John's call but enjoyed having him along. I'll
see what I can scrounge up for the next prize, but the real intent of the FOX
hunt is to train for that one time that someone is really lost and in trouble.
This exercise is excellent training for that. Besides that, it is ALWAYS more
fun when a BIG crowd is around for the FOX to hide from. Come on out next time
and join us. It only costs the price of gasoline and you may learn more about
antennas and what you can do with them! See you on the next FOX HUNT.
****

FROM " GATEWAY, THE PACKET NEWSLETTER " for August 28th, 1984
HF PACKET BULLETIN BOARD
You can now connect to W0RLI packet bulletin board system (PBBS) on 20 meters.
The PBBS is located near Boston,MA., and is run by Hank Oredson, W0RLI. Hank
has had the PBBS on 145.01 MHz for several months, and it had become one of the
major "servers" for the large Boston-area packet network.
The W0RLI PBBS software, written by Hank in Z-80 assembly language, runs on a
Xerox 820 with a TAPR TNC. The PBBS provides automatic time/date stamps for
messages, automatically deletes inactive messages, and will even try to send
you a beacon if there is mail waiting for you. Now, with the addition of a sec-
ond TAPR TNC, the bulletin board is available on both VHF and HF.
On twenty meters you will find the PBBS as near as 14.080 MHz as band occupation
permits. Use 300 bauds, and 200Hz shift. (The same shift and speed used by the
10MHz packet stations.) When you connect to W0RLI,the PBBS will send you oper-
ating instructions. (Via W0RLI)

```
*********************************************
```

HOMEBREW NIGHT   HOMEBREW NIGHT
The next regularly scheduled meeting of
the PPRAA is on Wednesday, Dec. 12th. It
w l be at Giuseppe's Depot at 7:30 PM.
I is HOMEBREW NIGHT and anyone who has
put a project together should bring it
for all to see and admire. We might even
provide a specially assembled " Ooh-Aah"
SQUAD for the winning entry. Monetary
awards will be given for the first three
places to win. See you there with my own
RTTY project. I could use the money, too!
     HOMEBREW NIGHT   HOMEBREW NIGHT

```
*********************************************
```

FOR SALE   FOR SALE   FOR SALE   FOR SALE
          by Reid - WA4UPD
B & K #607 Tube Checker - $40
Fairchild #766H Dual trace delay-sweep
     30mHz Lab scope - $300
B & K 1827 Freq. Counter 50mHz w/300mHz
     H.B. Prescaler $75
Viking ranger II - $75
15 Drawer metal cabinets $6
24 Drawer metal cabinets $9
Medium size plastic utility boxes $2
For more info or to buy, call:597-7689

CLUB EQUIPMENT FOR SALE

DESCRIPTION	MAKE/MODEL	MINIMUM BID
AMPLIFIER	PUBLIC ADDRESS	$10
ANTENNA	4BTV(needs repair)	$5
ANTENNA RELAY	(SOLD WITH KWS-1)	
BOX OF JUNK !	BOX OF JUNK !	NO MINIMUM
DIP METER	HEATHKIT HD-1250	$5
DUMMY LOAD	75ohm MILITARY	$5
HEADPHONES	MIDLAND 21-300	NO MINIMUM
HELICAL RESONATOR(1)	homebrew 15 Mtr	NO MINIMUM
HELICAL RESONATORS(2)	homebrew 20 MTR	NO MINIMUM
CW KEYBOARD	homebrew	NO MINIMUM
MICROPHONE	TURNER +3	NO MINIMUM
MICROPHONE	EV-63B(SOLD WITH KWS-1)	
MILITARY MONITOR STATION		NO MINIMUM
OSCILLOSCOPE	Tektronix 511AD	NO MINIMUM
POWER SUPPLY	(SOLD WITH R-174/URR)	
POWER SUPPLY	HEATHKIT SP-23	$5
RTTY TU	homebrew	NO MINIMUM
RECEIVER	COLLINS 74A-4	$100
RECEIVER	MILITARY R-174/URR w/PS	$25
SIGNAL GEN.	HEATHKIT G-1	NO MINIMUM
SPEAKER	COLLINS (SOLD WITH R-174/URR)	
SPEAKER	MOTOROLA	NO MINIMUM
TELETYPE MODEL 28ASR	(SOLD WITH ROLL OF PAPER &	
	PARTIAL ROLL OF TAPE)	NO MINIMUM
TRANSCEIVER	MIDLAND 13-500	$20
TRANSMATCH	CONV. ARC-5	NO MINIMUM
TRANSMITTER	MILITARY BC-458A	NO MINIMUM
TRANSMITTER	COLLINS KWS-1	$200

:This item requested by NØCYR
:and reprinted from Nov. QST
:
: The basis of all emergency/
:disaster communications is
:advance planning and coord-
:ination, and this task will
:become more demanding as the
:requirements increase. If
:you are affiliated with ARES
:or RACES, your most import-
:ant job is liaison and co-
:ordination with the agencies
:requiring communications
:support and the government
:officials responsible for
:for maintaining the disas-
:ter plans. Second, but of no
:less importance, is the
:organization and prepared-
:ness of your own group. Only
:with continued coordination
:and practice can you expect
:to be called - or be ready
:when you are called!
:   * K3PUR *
:
:(Ed note; this should just
: about sum up what ARES is
: all about. Maybe we'll see
: more activity on the net.)

Membership Application
PIKES PEAK RADIO AMATEUR ASSOCIATION

Name _____

Address _____

City _____ State _____ Zip _____

Call _____ License Class _____

Are You An ARRL Member? ☐ Yes ☐ No   Telephone _____

          Full Member $12.00   ☐

          Family Membership $15.00   ☐

Additional Names _____ Calls _____

                  _____   _____

                  _____   _____

Associate Member $8.00   ☐   (Outside Teller & El Paso Counties.)